

A NEW TECHNIQUE FOR DEALING WITH THE APPENDIX STUMP.

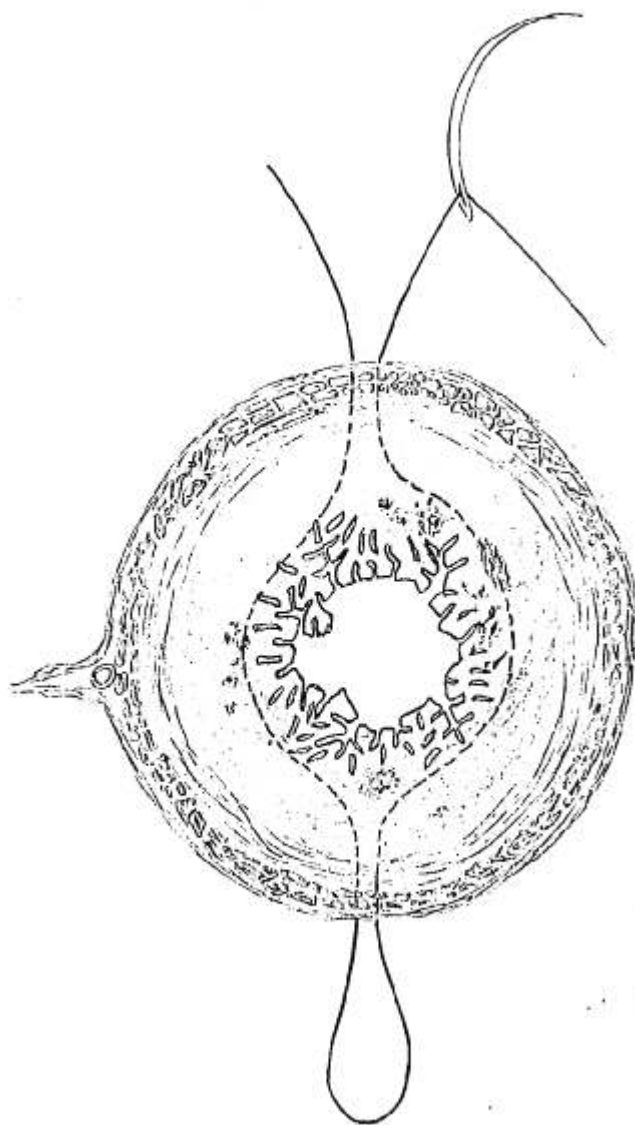
BY CHANNING W. BARRETT, M.D.,

OF CHICAGO.

As the larger questions of appendicitis have been settled we are now as perhaps never before turning our attention to the technique. Numerous papers have been devoted to the management of the stump. Many cases are operated upon to relieve minor but persistent or oft recurring symptoms. The disability is not great, but this may lead to a severe attack. To encourage the acceptance of surgical relief before the severe attack occurs, the operation should have the following advantages:—1. It must be safe. 2. It must reach the appendix through as small an opening as is consistent with good work, in order that the abdominal wall shall not be unnecessarily weakened. 3. No considerable stump of appendix should be left outside or inside the bowel. 4. The stump should be dealt with in such a way as to have no opportunity for leakage of feces or septic material from the bowel, and should allow no possibility of hemorrhage into the bowel, or peritoneal cavity or cellular tissue. 5. No unnecessary opportunities for adhesions should be created. 6. The above advantages in dealing with the stump should be attained without tedious sewing, undue manipulations, or unnecessary opening of the bowels.

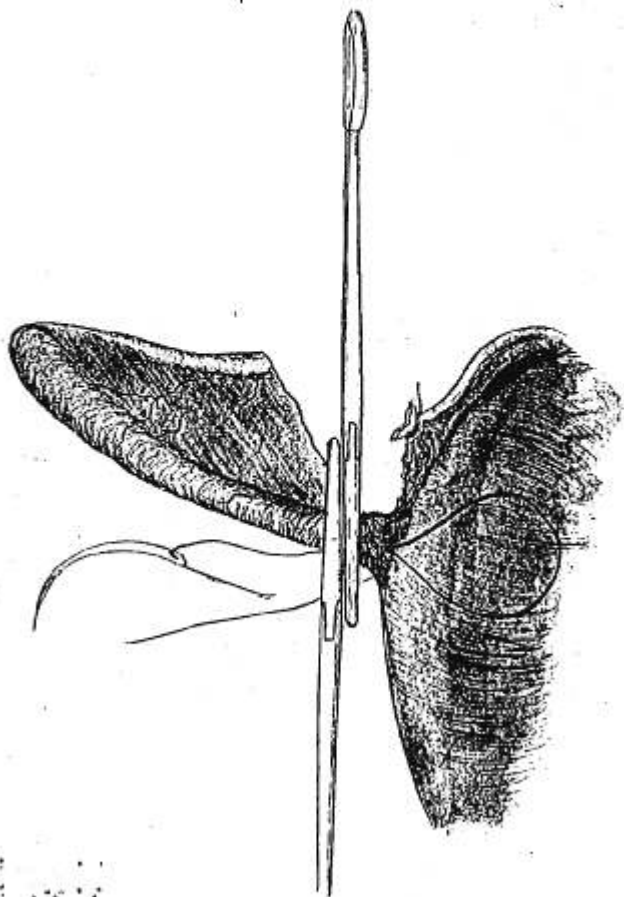
The method of tying the stump and leaving it uncovered, formerly practiced and again being revived, is easy of application and allows of no immediate escape of bowel contents, but often leaves an undue portion of the appendix, necessitates a non-absorbable ligature, leaves opportunities for adhesions, and, above all, connects the bowel cavity with the peritoneal cavity by means of a tied fistula lined by mucous membrane, which is difficult to obliterate. This may not have the same

FIG. 1.



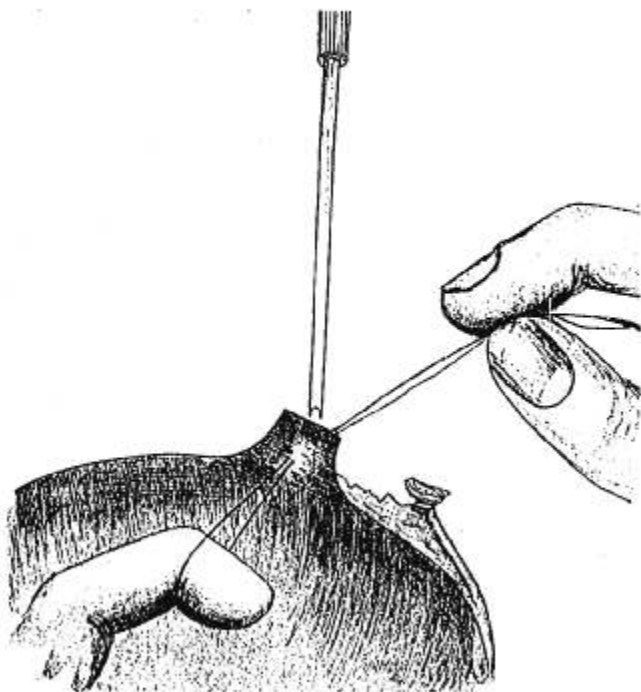
Showing the method of placing the suture.

FIG. 2.



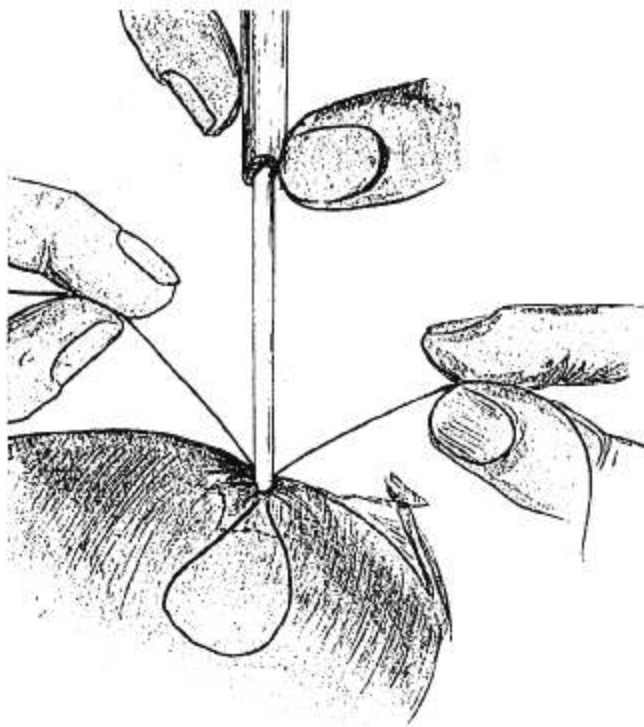
Mesoappendix tied, cut and pushed down, leaving the appendix free. The suture is placed at the base of the appendix, as shown in Fig. 1.

FIG. 3.



Appendix cut after being crushed and ready to be inverted with the tucker.

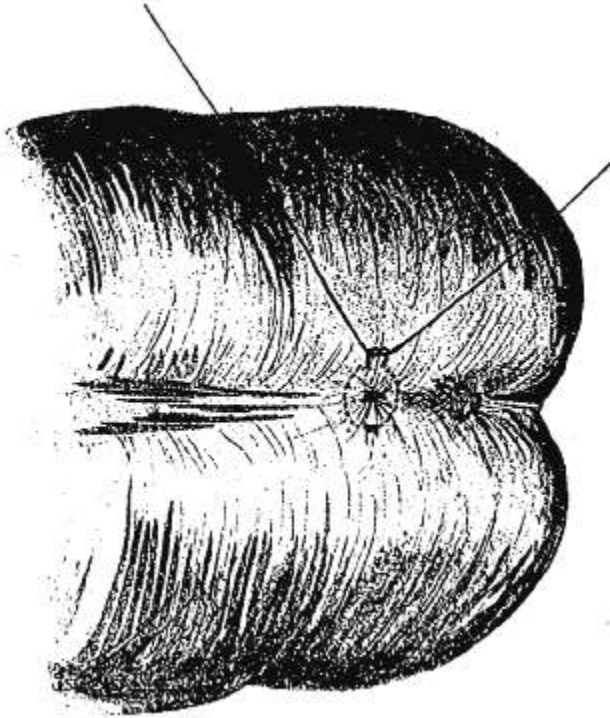
FIG. 4.



Appendix inverted, showing stump with a dotted line.

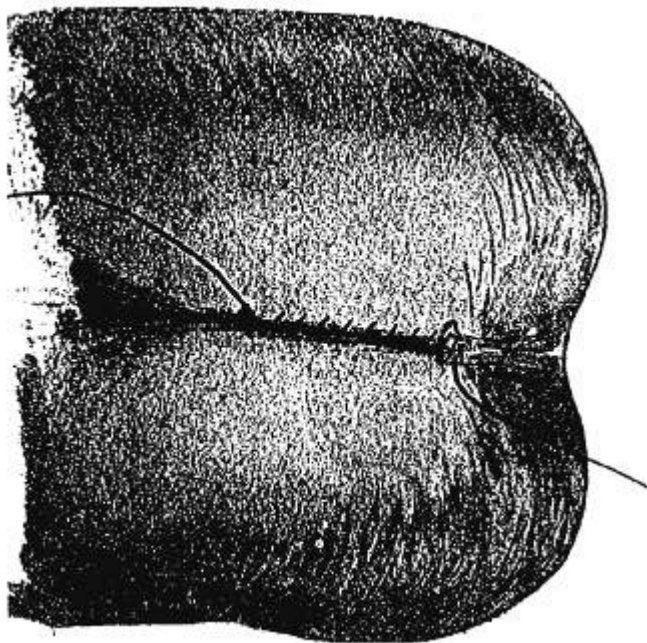
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FIG. 5.



Ligature being drawn down. This is done as much as possible before the tucker is removed.

FIG. 6.



Appendix region overstitched with running Lembert suture, which is then tied to one on mesoappendix.

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Fig. 7.



Double pointed tucker.

objection in cases in which draining is necessary, but in clean cases, where ideal surgery may be done, this is unsurgical.

The method of dissecting the appendix out of the cæcum and closing with interrupted suture has the advantage of getting rid of all the appendix but the great disadvantage of an open bowel while manipulations are going on, with the possibility of leakage of feces. It introduces into the clean appendicitis case the dangers incident to intestinal surgery with their added mortality. The cuff method has the disadvantage of mucous membrane to mucous membrane, is tedious and has nothing to commend it, if the tying off of the whole stump is safe and furnishes a pocket for infection if the stump is infectious. The same may be said of sinking the tied stump by means of a purse string. The purse string method may be made to prevent leakage of feces, is quickly done, and leaves little opportunity for adhesions but is now being condemned because it does not sufficiently provide against hæmorrhage. The technique of Harris making the ligature include the artery obviates this to some extent, but it is not entirely reliable. The method proposed of tying the appendix in the cæcum is impractical and dangerous. A method which I now present depends for its success upon the following facts: that portion of the stump which lies outside the ligature before the stump is inverted is the only portion tied, the rest lies in direct communication with the bowel untied. Unlike the ordinary purse string suture, then, the suture is so placed that all the vascular portion of the appendix lies outside the suture as shown in the cut. The technique is as follows:—With as small an incision as possible the appendix is secured and freed from adhesions, the mesoappendix is clamped, tied and cut so that the appendix stands up directly from the bowel. A number two catgut of good tensile strength is used on a straight or curved needle. The needle enters the tissue at the junction of the bowel and appendix one-fourth the circumference from the mesoappendix. It is made to enter the deep structures and yet avoid the lumen and come out on the opposite side of the appendix. It is then made to enter very close to its exit, sweep

around the opposite side of the lumen in the deep structure and emerge close to its former entrance. A loop of the catgut is retained opposite the two ends. We now have nearly all the appendix lying outside the suture. The appendix is clamped a little distance above the suture. Another clamp is placed immediately above this and the appendix cut between the forceps. The ligature is now made to hold the cæcum by traction upon its two ends and the opposite loop. The forceps are now removed and a forked appendix tucker is made to carry the crushed stump into the bowel. At the same time the ligature is drawn down and encircles the tucker but may be drawn as tight as desired, as the tucker cannot hold on to the stump. All forceps used to invert the stump have a tendency to hold to it and return it. The one-point tucker is worse than useless in dealing with the untied stump, leaving the forceps to be preferred.

The operation is completed by overstitching the stump with a continuous Lembert suture, carrying it along the free edge of the mesentery running to the mesoappendix stump and this suture is tied to one end of the ligature on the mesoappendix.

This operation then ties all the vascular portion of the appendix, turns the raw edges in, brings peritoneum to peritoneum, does not pucker the bowel, and these advantages are gained through the use of a suture which is easily placed, making the operation safe and easy of performance.